COMMONWEALTH of VIRGINIA
DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, VIRGINIA 23219-2000

November 5, 2010

Water Docket, EPA, Mail code: 2822T,
1200 Pennsylvania Ave., NW.
Washington, D.C., 20460.

Re: Comments on the Draft Chesapeake Bay TMDL

Subject: Docket ID No. EPA-R03-OW-2010-0736

The Virginia Department of Transportation (VDOT) is providing comments concerning the draft Chesapeake Bay Total Maximum Daily Load (TMDL) prepared by the EPA. VDOT is a "small or Phase II" MS4 permittee and would receive a waste load allocation (WLA) when the TMDL is adopted by the EPA. In addition, VDOT would be affected through the National Pollutant Discharge Elimination System (NPDES) Stormwater Management Permit program for construction related stormwater discharge, administered in Virginia by the Department of Conservation and Recreation. VDOT also has several Virginia NPDES permits for the discharge from operations such as tunnels and wastewater treatment plants at public rest areas. Finally, VDOT has several maintenance facilities that have on-site septic systems (both conventional and alternative). Therefore, VDOT would be affected by the proposed TMDL in several source sectors and would face significant expenditures to meet the proposed initiatives in the TMDL. We appreciate the opportunity to comment on the Draft TMDL and support EPA's efforts to devise scientific and comprehensive strategies to address the water quality issues within the Chesapeake Bay. However, we share Virginia's Governor McDonnell's and Secretary of Natural Resources Douglas Domenech's concerns "about the process, cost, science, authority, allocations and timeliness" of the draft TMDL raised in the September 3, 2010 letter to the EPA transmitting Virginia's draft Watershed Implementation Plan (WIP). After review of the Draft TMDL, VDOT offers the following comments:

1. **Schedule-related concerns.** VDOT recognizes the challenges posed by the effort to create a TMDL for 92 stream sheds for the multi-state Chesapeake Bay watershed. Nevertheless, we think that EPA has unnecessarily complicated the task by mandating a Dec. 31, 2010, deadline for issuing the TMDL, rather than taking full advantage of the later court-mandated deadline of May 2011. This aggressive schedule has also created problems for the states with the required schedule for development of their respective

WIPs. VDOT requests that the EPA follow a more reasonable timetable for both the WIPs being developed by the states and the TMDL development. VDOT is concerned that the current schedule does not provide the time to accurately evaluate and model conditions in the stream sheds/Bay, to compile the necessary data, to develop detailed action plans, or to understand the cost implications to the regulated community. The compressed schedule has certainly contributed to the deficiencies identified by EPA with all the draft WIPs developed by the states and especially to the failure in all WIPs to satisfy the reasonable assurance requirement. In striving to meet the interim deadlines, EPA has limited opportunities for stakeholders to understand the technical basis and policy choices on which the target allocations are based. Stakeholders should have several months, at a minimum, to understand the issues involved, to comment on the draft WIP and draft TMDL, and to assess the potential impacts. The proposed 45-day comment period is inadequate for stakeholders to provide informed comments and for EPA and the states to adequately address substantive comments. Therefore, VDOT respectfully requests that EPA evaluate the comments on the draft TMDL, reissue a revised draft TMDL in response to public comment, and allow another 45 day public comment period on the draft TMDL prior to the publication of the final TMDL.

As noted earlier, the compressed preparation period has led to a lack of detailed plans in the Virginia WIP, which has made it impossible for VDOT to evaluate the cost implications of meeting the draft TMDL and WIP requirements. We understand that more detail will be provided in the Phase II WIP and revised TMDL. However, the cost implications of this program are too significant to wait until that time. Therefore, we request that EPA work in concert with the states and with input from stakeholders to conduct a comprehensive cost assessment related to WIP and TMDL implementation.

2. **Concerns about the WIP implementation cost and the cost-benefit ratio of the water quality benefits.** VDOT requests that EPA and the states analyze the cost implications of the draft WIP and draft TMDL for the various source sectors. VDOT also requests that the draft WIP and TMDL provide sufficient detail so that the costs of compliance can be understood by the regulated community within each source sector. For example, VDOT understands that the cost for Virginia to comply with the 2005 Tributary Strategy program (prepared as part of the 2000 Chesapeake Bay Agreement) was estimated to be about $10 billion over a 15-year period (projected in 2005). As you know, the Tributary Strategy Program would fall short of meeting the target allocations required by the WIP and Chesapeake Bay TMDL. Therefore, the cost to Virginia for implementing the approved WIP/TMDL will exceed the $10 billion estimated for the Tributary Strategy Plan, undoubtedly by a significant amount. The cost estimates for the Tributary Strategy Plan were based on 2005 dollars and the additional reductions required in nutrient and sediment loading to achieve the WIP/TMDL allocations would be significantly more costly per pound of removal compared to the Tributary Strategy Plan. The Hampton Roads Planning District Commission (HRPDC) conducted a preliminary cost analysis in 2010 for the 16 local governments in southeastern Virginia and concluded that the Chesapeake Bay TMDL implementation cost for the 16 local governments would be

about $679 million per year or about 10 percent of their total annual revenue. They also estimated that the capital cost of nutrient removal for the urban stormwater sector would be about $15,000 per pound of nutrient removal. EPA's 2005 publication entitled National Management Measures to Control Non-point Source Pollution from Urban Areas estimates that the annual maintenance costs for typical BMPs used for nutrient removal to be $2,200 for a sand filter and $3,000-4,000 for a bioretention basin. According to the National Research Council publication entitled Urban Stormwater Management in the United States (2008), retrofitting an existing urban area with stormwater management designed for nutrient removal can be as high as $850,000 per city block. According to the Center for Watershed Protection, the cost of stormwater retrofits per acre of treatment can range from $40,000-120,000. All of these cost estimates reinforce the significant capital costs and operations and maintenance costs that will be necessary to implement the Chesapeake Bay TMDL. During a time of extreme budget challenges, VDOT and other affected public agencies cannot afford the costs of implementing the WIP/TMDL, without significant state/federal funding. In addition, because the draft Virginia WIP and Chesapeake Bay TMDL is largely programmatic in its proposed initiatives, it is impossible for any agency to effectively estimate the magnitude of the cost implications of implementation. In our opinion, the lack of a comprehensive cost assessment and failure to identify and include specific funding mechanisms in the WIP and TMDL decreases the potential for successful implementation of these initiatives.

According to the EPA's draft TMDL, *"the CWA authorizes EPA to provide funding to the Bay watershed jurisdictions through various sources, including but not limited to Chesapeake Bay Implementation grants, Non-point Source Control grants, Section 106 grants for water pollution control programs, the Clean Water State Revolving Loan Fund, the American Recovery and Reinvestment Act, and various grant programs targeting Chesapeake Bay restoration. The funding will help the jurisdictions meet their pollutant reduction targets."* (Page 7-3 of the draft TMDL for the Chesapeake Bay). According to the EPA website on the Chesapeake Bay Executive Order (EO), more than $490 million is targeted in FY 2011 toward meeting the outcomes and goals set forth in the EO Strategy, contingent upon appropriations by Congress. If the stated intent of Congress through the Clean Water Act is to provide funding to cover the WIP/TMDL costs, then EPA must analyze the cost of TMDL implementation and identify additional funding mechanisms to offset the implementation cost to the affected source sectors and affected parties.

Furthermore, EPA stated in their Draft EPA Position Paper on The Chesapeake Bay TMDL Framework dated April 6, 2009 that "an affordability assessment will be conducted to determine the degree of financial stress that the Bay TMDL loading reductions will place on the individual source sectors (e.g., wastewater treatment, agriculture, municipal stormwater runoff) and how those financial burdens might be addressed within the implementation plans". EPA's commitment to complete an affordability assessment is too important to the process to wait until after the final TMDL

is published. VDOT respectfully requests that this assessment be conducted immediately and the results provided as part of another public comment period for the draft TMDL.

3. **Concerns about the reliance upon incentive-based programs in the WIP for pollutant load reduction for some sectors.** VDOT is concerned that the TMDL and draft Virginia WIP relies upon incentive-based initiatives for several source sectors, especially to reduce pollutant loading from non-point sources. If the incentive-based programs are not backed with substantial and reliable financial incentives, then the target allocation for that source sector is not likely to be achieved. If that occurs, then "regulated or permitted" entities that have point sources, such as VDOT and local governments, will likely have their target allocations reduced and their WLAs tightened. In fact, EPA has already stated that would be their intention. The draft TMDL states *"Without a demonstration of reasonable assurance that non-point source allocations will be met, a TMDL would have to assign all necessary reductions to the point sources."* (Page 7-1 of the draft Chesapeake Bay TMDL). It is an unfair and unreasonable burden on point source dominated sectors to expect that they will be required to meet their target allocations and then be required to reduce their pollutant loadings further to compensate for other source sectors that do not meet their allocations. Therefore, VDOT requests that the EPA work closely with the states to develop a detailed series of initiatives, a detailed tracking system, an accountability system, and comprehensive funding mechanisms for each source sector that provides reasonable assurance for all source sectors to achieve their target allocations and removes the burden of point source sectors having to, potentially, shoulder the non-point source sector's responsibility.

4. **Interrelated WIP and TMDL concerns.** The ability to provide meaningful input is also hampered by the sheer scale and complexity of this TMDL and WIP process. For instance, in Virginia alone there are expected to be about 100 aggregated WLAs allocated by the TMDL among MS4 permittees. An additional complicating factor is the fact that the TMDLs and WLAs are issued by EPA, while the WIPs are issued by the state. Submitting TMDL comments to EPA and WIP comments to the state creates an artificial distinction between what are, essentially, inter-related issues. These complexities and limited time for review make it very challenging to provide meaningful input and provide recommendations that address the concerns of all stakeholders.

5. **Concern about reliance upon modeling for the target pollutant loadings/allocations.** The Chesapeake Bay watershed model is not a perfect representation of actual conditions. Rather, it is a rough approximation. Given the geographic scale of the model and the relative insensitivity of the regional model to represent localized conditions, VDOT believes that the draft TMDL relies too much on model forecasting and not enough on real time data. Even EPA admits the model has *"inherent uncertainty"*. We understand that EPA has already committed to fix two known flaws that could result in changes to the strategies identified in the draft TMDL/WIPs. VDOT is concerned that the total reliance upon a model which is still evolving may lead to incorrect and unnecessary allocations and initiatives that are passed along to source sectors. The resulting lack of reliable modeling results complicates stakeholder efforts to understand what will be

asked of them under the WIPs/TMDL and makes it very difficult to provide meaningful comment on the draft TMDL. The unresolved modeling issues raise concerns that source sectors, such as permitted point sources, risk being mandated to make additional reductions while implementing projects that were designed to a different standard. We understand that EPA intends to work with the states to enable them to make TMDL revisions during 2011 as new modeling data and other information become available. We recommend that EPA clarify how this TMDL adjustment process will actually work, include a schedule, and identify the potential implications for WIPs, NPDES permits including MS4s, and other affected parties.

6. **Lack of emphasis on public education and outreach.** From VDOT's experience, tangible water quality benefits result from educating the public and VDOT's own staff about pollution reduction in stormwater discharges and identifying and preventing illicit stormwater discharges to the storm sewer system. Therefore, VDOT requests that the TMDL emphasize the positive benefit of public education and outreach and provide recognition of load reductions that can be achieved through an effective public education program.

7. **Concern about future reductions in allocations for point sources.** Page 7-11 under Section 7.2.4 of the draft TMDL requires additional reductions of loadings from point sources and calls for revising the final December 2010 Chesapeake Bay TMDL to reallocate additional load reductions from non-point to point sources of nutrient and sediment pollution. As stated in Item 3, VDOT is concerned that point source dominated sectors will unduly experience continued reductions in their allocations at the same time that relief is granted to non-point source dominated sectors.

8. **VDOT supports Virginia's proposed alternative approach to nutrient allocation for the James River.** According to table 8-4 on page 8-6 of the draft TMDL, the Virginia WIP fails to meet the total N allocation by 16% and the P allocation by 22% for the James River. However, the Virginia WIP does meet the 60% target reduction by 2017. VDOT supports the Virginia WIP's proposal to evaluate the chlorophyll standard and then re-assess what, if any, actions may be necessary beginning in 2017 to meet the final target allocation. This approach is supported by studies that have documented that the James River has less impact on the water quality of the main stem of the Chesapeake Bay than other rivers in the Bay watershed. Again, VDOT supports the proposed Virginia WIP approach to complete a *"chlorophyll standards review and amend standards if necessary prior to the scheduled revision of the TMDL in 2017"*.

9. **Reasonable assurance and lack of funding.** VDOT agrees with EPA's assertion on page 8-6 of the draft TMDL that the Virginia WIP does not meet the Reasonable Assurance "standard" because it does not adequately address gaps in funding, staff resources, and legislative authority. In particular, VDOT requests that adequate funding be made an integral part of the reasonable assurance test and that comprehensive state and federal funding be made available to cover the costs of implementation.

10. **Inequities in backstop options.** Table 8-6 on page 8-11 of the draft TMDL discusses backstop allocation options that could be enforced by EPA if WIPs do not meet the two-tier standard expected by EPA. One of the options would be:

    - *"requiring 50% of urban MS4 lands to meet the aggressive performance standard through retrofit/ redevelopment; 50% of unregulated land treated as regulated, so that 25% of unregulated land meets aggressive performance standard designation as necessary."*

    This option is proposed for both the moderate, high, and full backstopping scenarios in the draft TMDL. VDOT asserts that it is unreasonable to develop a moderate backstop level option that is identical to the full backstop option. This inequity is particularly troublesome because the cost of implementing urban stormwater retrofits for an MS4 within an urbanized area would be one of the most costly options per pound of nutrient removal. According to the National Research Council publication entitled Urban Stormwater Management in the United States (2008), retrofitting an existing urban area with stormwater management designed for nutrient removal can be as high as $850,000 per city block. According to the Center for Watershed Protection, the cost of stormwater retrofits per acre of treatment can range from $40,000-120,000. Given these significant costs, VDOT requests that EPA identify a graduated series of backstop options that are commensurate with the different levels rather than mandating retrofitting/redevelopment actions for the urban MS4 sector .

11. **Establish guidelines for segregation of aggregated WLAs.** Table 9-3 of the draft TMDL provides preliminary WLAs that are aggregated for the source sectors. VDOT understands that the Phase II WIP and revised TMDL will refine the WLAs by stream shed, but that the WLAs will still be aggregated among many parties. In order to avoid potential legal problems, VDOT requests that the EPA and relevant state agencies establish the guidelines that would be used to segregate WLAs among the different parties should that become necessary in the future.

12. **Urban stormwater controls for moderate backstop.** On pages 8-14 to 8-15 of the draft TMDL, it states that *"In the urban lands covered by MS4 permits, the TMDL WLAs for jurisdictions receiving a moderate backstop (Virginia) makes an assumption that the MS4 permit has controls sufficient to implement a performance standard equal to the nutrient and sediment reductions that would result from the following practices:*

    *Regions with karst topography (low permeability); Coastal Plain Lowlands (groundwater).*

    - *50 percent of area—impervious cover reduction, e.g., cisterns and collections systems to capture rainwater for reuse*
    - *30 percent of area—filtering practices e.g., sand filters, bioretention, dry wells, designed to reduce nitrogen by 40 percent, phosphorus by 60 percent, and sediment by 80 percent from a pre-BMP condition.*
    - *20 percent of area—infiltration practices e.g., infiltration trenches and basins,*

*designed to reduce nitrogen by 85 percent, phosphorus by 85 percent, and sediment by 95 percent from a pre-BMP condition.*

*Ultra-urban regions—defined as high- and medium-intensity land cover.*

- *50 percent of area—impervious cover reductions, e.g., cisterns and collections systems to capture rainwater for reuse.*
- *30 percent of area—filtering practices, e.g., sand filters, bioretention, dry wells, designed to reduce nitrogen by 40 percent, phosphorus by 60 percent, and sediment by 80 percent from a pre-BMP condition.*
- *20 percent of area—infiltration practices, e.g., infiltration trenches and basins, designed to reduce nitrogen by 85 percent, phosphorus by 85 percent, and sediment by 95 percent from a pre-BMP condition.*

*Other urban/suburban regions*

- *10 percent of area—impervious cover reduction.*
- *30 percent of area—filtering practices, e.g., sand filters, bioretention, designed to reduce nitrogen by 40 percent, phosphorus by 60 percent, and sediment by 80 percent from a pre-BMP condition.*
- *60 percent of area—infiltration practices designed to reduce nitrogen by 85 percent, phosphorus by 85 percent, and sediment by 95 percent from a pre-BMP condition.*

*EPA assumes that the applicable MS4 performance standard applies to 50 percent of urban lands through a combination of retrofit and redevelopment requirements. Jurisdictions may meet the WLA assumptions by: (a) applying a different set of practices that would result in equivalent nutrient and sediment reductions, (b) applying a more aggressive performance standard on a smaller percentage of urban lands included within the WLA, or (c) apply a less aggressive performance standard on a larger percentage of urban lands as long as the total nutrient and sediment reduction from the urban lands assumed to be within the WLA are equal to or greater than the reductions that are assumed within the WLA compared to a pre-BMP condition.*

*The stormwater WLA also assumes that 50 percent of urban lands that are not covered by MS4 permits are treated like MS4 areas, meaning that 25 percent of unregulated stormwater (i.e., 50 percent of 50 percent) is assumed to meet the performance standard for nutrient and sediment reductions described above. Before imposing such controls, it is assumed that (1) unregulated sources will someday be regulated under the NPDES permit program through appropriate designation/rulemaking/permits; and (2) the categories' projected load reductions (based on NPDES effluent controls consistent with the WLA) will result in those needed reductions. As explained above in Section 8.3.1, additional controls would be imposed only after the source is designated or otherwise regulated by an NPDES permit, and after an effective NPDES permit coverage is established.*

*Finally, the stormwater WLA assumes that all areas subject to a construction general NPDES permit will implement erosion and sediment control practices that would result in a 25 percent reduction in nitrogen, a 40 percent reduction in phosphorus and sediment compared to a pre-BMP condition on bare, construction land."*

VDOT is concerned with the proposed practice of mandating stormwater management practices to such broad physiographic types. As an agency that maintains thousands of miles of roads and operates approximately 160 facilities in the Chesapeake Bay watershed within many physiographic regions, this initiative would further complicate the implementation process. According to the Clean Water Act, and the MS4 /NPDES regulations, specific BMPS would need to be developed by a MS4 permittee to ensure that their pollutant loadings achieve the WLA for each impaired waterbody. This process requires consideration of the specific conditions in an impaired waterway. Given that, VDOT believes it is unnecessary and redundant to place prescriptive actions on the allowable BMPs that could be used within what are very broadly defined physiographic types. VDOT requests that EPA work closely with the states to allow maximum flexibility in the alternatives for the backstop options. These options should not require specific BMPs but allow all effective structural BMPs and non-structural actions, including nutrient exchange, to be used to achieve pollutant load reductions.

VDOT is also concerned with the initiative in the stormwater WLA that would require 50 percent of urban lands not currently included in an MS4 permit to meet redevelopment and retrofit requirements. As discussed previously, stormwater retrofits in urbanized areas are probably the most costly action per pound of nutrient removal. The draft TMDL is unclear as to whether this would be required only if those urban areas become included under the MS4 regulated areas through NPDES regulatory revisions or if it would be required upon adoption of the TMDL. Finally, if additional reductions in nutrient loading are necessary outside current MS4 geographic limits, then VDOT requests that alternative mechanisms (such as a nutrient exchange program) be allowed.

VDOT is concerned that the proposed revisions to the NPDES construction general permit would require aggressive controls for nutrient removal, which heretofore have not been required. Erosion and sediment controls at construction sites have been designed to prevent/control sediment runoff primarily through perimeter and temporary controls. If specific target reductions are required for phosphorus and nitrogen removal, then the erosion and sediment controls would need to be much more comprehensive and would need extended detention, infiltration, or bio-retention management that is typical of permanent stormwater management facilities used for nutrient removal. This change in regulatory standards would result in a significant cost increase for treatment. For example, Virginia's 2005 Tributary Strategy Plan estimated the cost of traditional BMPs for erosion and sediment control to be about $2,000 per acre treated with a maintenance cost of approximately $500. This compares with the estimated costs for an infiltration BMP of approximately $5,285 per acre treated with a maintenance cost of $528 and a filtering BMP cost of approximately $12,719 per acre treated with a maintenance cost of $763. Given this 300-600 percent difference in treatment costs, VDOT requests that EPA reconsider this proposed revision to the NPDES construction

general permit program and allow the focus of erosion and sediment controls to remain on erosion prevention and sediment removal.

13. **Offset Programs.** According to Section 10.1.2 of the draft TMDL, EPA states that *"new or increased loadings of nitrogen, phosphorus, and sediment in the Chesapeake Bay watershed that are not specifically accounted for in the TMDL's WLA or LA will be offset by loading reductions from other sources where such offset credits are generated under programs that are consistent with the definitions and common elements described in Appendix S."* VDOT asserts that it is unfair to impose a moving standard for pollutant reduction on the regulated community. If offsets are required, then the TMDL should specify that the offsets would be the responsibility of the party that is introducing a new pollutant source and not the responsibility of other parties.

VDOT appreciates the opportunity to comment on the draft Chesapeake Bay TMDL. If you have any questions or comments, please feel to contact me or either of those listed below.

Roy T. Mills
State Stormwater Program Administrator
(804) 786-9013
Roy.Mills@VDOT.Virginia.gov

Tracey E. Harmon
Water Quality Permits Program Manager
(804) 371-6834
Tracey.Harmon@VDOT.Virginia.gov.

Sincerely,

Gregory A. Whirley